

## **ABSTRACT OF THE DISCLOSURE**

A method of accurately registering successive exposures of photosensitive material by forming between the exposures an image of the latent exposure pattern caused by initial exposures. In a photosensitive material comprising a photo acid generator and an acid-catalyzed cross-linkable resin precursor, the image may be obtained by including in the photosensitive material a pH sensitive dye which responds to the liberation of acid in the first exposure to reveal the position of the first exposure. The image may be a three-dimensional image which is then used to control the position and intensity of further exposures. The technique is particularly applicable to the production of photonic crystals with local structural modifications such as are required to define waveguides or resonators.